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EDITORIAL.

THE TRIUMPH OF PASTEURISM.—Deserving name used by Dr. Fleming—Pasteur Institute opening—its advantages and objects—public money builds it—and keeps it in working trim—it is not a dispensary for rabies patients—it is for investigation of all contagious diseases—it is a national patho-biological laboratory—France ahead of all other countries in the encouragement she gives to science. SWINE PLAGUE AND TEXAS FEVER COMMISSIONS.—Investigators are not made—but financial help is necessary to them—what of our patho-biological laboratory—changes in the swine plague commission—it is at work—first in Baltimore, now has gone South—interest in the report—Dr. Klein's remarks on Dr. Salmon. CRESYL OR CREOLINE AND ESERIDINE.—New drugs in veterinary pharmacopeæ—advantages of cresyl as an antiseptic—experiments in its use. ESERIDINE.—Offers advantages over Eserine. THE REVIEW PRIZE.—Same committee is reappointed—applications will be recived any time—come one, come all. REGULATION OF THE PRACTICE OF VETERINARY MEDICINE IN PENNSYLVANIA.—An old bill in an improved form—our wishes for its success—good pleading of the committee in charge of the bill. CRUELTY TO ANIMALS.—Dastardly abuse of a professional title—diabolical act punished by well deserved sentence to hard labor—the so-called veterinary surgeon not a member of our profession.

"THE TRIUMPH OF PASTEURISM."—It is in this well-chosen and justly applied phrase that Dr. G. Fleming refers in the *Veterinary Journal* to the inauguration of the Pasteur Institute, which took place on the 14th of last November. The appeal which had been made in the name of science had been satisfactorily answered, more than two million and a half francs having been subscribed, and, after the payment of all expenses, a little less than one-half of that sum remains to insure the continuation of the work. Many persons seem disposed to regard this as sim-

ply a scientific scheme for the promotion of more vigorous and comprehensive researches in the nature and history of rabies, and, denying the value of the results already accomplished in that direction, if not indeed, blind to the fact of their discovery, seem to be quite indisposed to appreciate or sanction the necessity for any further expenditure of the money. But the proposed Institute is not to be a mere dispensary for the treatment of rabid patients, nor is it strictly only an establishment devoted to the prosecution of further researches in rabies. It is to be, comprehensibly expressed, a patho-biological institute, in which contagious diseases of every kind are to be investigated as thoroughly as possible, with whatever scientific agencies and appliances may be attainable, and every subject connected with the science of micrology will, therefore, be taught at the Pasteur Institute. The suggestion which makes the name of the famous chemist the patronymic of the institution is a wise one. The science of micro-biology is largely his debtor, and in recognizing this fact by responding liberally, as they have done, to his call for support in a good work, his countrymen have honored themselves as well as Pasteur. Dr. Fleming speaks truly, when he says that "France now stands far ahead of every other country in the encouragement she gives to science," and not many well informed scientists will dispute the verdict.

Swine Plague and Texas Fever Commissions.—The remark of Dr. Fleming quoted above may be fitly accompanied by another utterance of the same gentleman, to the effect that "investigator of the Pasteur type cannot be created by State intervention," which, however, leaves room for a word of qualification. It is true that the State cannot create the accomplished investigator, but it is equally true that when the man of genius is born, the State may very largely contribute to the efficiency and value of his studies and his discoveries, and that one of the methods by which this can be accomplished is the establishment or "creation," and endowment of patho-biological institutes, and other similar centres and promoters of study and knowledge. And it gives us pleasure to notice that our National Legislature is not wholly oblivious, in a way, to this truth, and that, in fact, there already ex-

ists, in a somewhat embryonic way, something like a materialization of the abstract fact in the Commission on Swine Plague already in operation. Besides this, we may also allude to the commission or committee appointed by the Union Stock Yards in Chicago, for the prosecution of special investigations in Texas fever, in which the appearance of the names of Dr. Stalker of Iowa, and Dr. Casewell of Chicago, are good proof that our people have not remained quite indifferent to the study of at least these economic and domestic branches of science.

The composition of the Swine Plague Commission, which had been appointed by Commissioner Coleman, has been somewhat modified, Dr. Meade Bolton being appointed in the place of Professor Welsh, who has found himself unable to perform the duties of the position. Thus constitued, the commission has entered upon their work, and after some labor performed in Baltimore, have adjourned to South Carolina. Their report cannot fail to include facts of a very interesting character, and it will be watched for and carefully studied by breeders, pathologists and veterinarians, as well as all others who may feel a scientific or commercial interest in the subject. This interest has been highly intensified by the expression of antagonistic opinions by Drs. Salmon and Billings, the two most conspicuous of the biologists among those who have made a special study of this most dangerous and troublesome scourge. And this is in fact, not a mere personal discussion between adverse American scientists, but is also a contention of opinion which involves the investigators of Europe, as well. It has recently engaged the pathologists of England, and among these an article by Dr. Klein in the *Veterinary Journal* for December last may be cited, as of interest and value, under the title of "Remarks on the Etiology of Swine Fever."

In this Dr. Klein says:

In his most recent publication on swine-plague, Mr. Salmon maintains (Report of the Commissioner of Agriculture for the year 1886) that the infectious disease of swine known in America as hog cholera or swine-plague, in this country as swine-fever or swine-plague, really comprises two different infectious diseases: (1) one disease is chiefly localized in the large intestine—hæmorrhagic ulcerative enteritis—this is the hog cholera; (2) the other is chiefly an affection of the lung, the swine-plague.

These statements are irreconcilable with the experimental evidence which I published in 1878 (Reports of the Medical Officer of the Local Government Board for 1877–78), and with the observations made also on the disease naturally occurring amongst swine. I have shown in that report, by numerous experiments, that by inoculation or by feeding of healthy pigs with particles of the diseased lung, or of the ulcers of the large intestine or of the peritoneal exudation, the same disease is produced; from the post mortem examination of such experimental animals, as well as those that had become naturally affected with the disease, I have shown that it is chiefly the lung, next also the large intestine, which is subject to the disease, and I have therefore spoken of it as infectious pneumo-enteritis. By injection as well as ingestion of matter taken from the ulcers of the large intestine, I have produced in healthy pigs the typical disease of the large intestine and also of the lungs; further, by injection of matter taken from the diseased lung I have produced in healthy pigs the typical disease, both of the large intestine and of the lung. There can be no question, from an inspection of my records of post mortem examinations of these experimental animals (*l. c.* pp. 183–207, experiments i.–xxii.), about the unity of the pulmonary and intestinal disease. An appearance to which I have drawn attention in the above report, is the hæmorrhage in the endocardium, chiefly of the left ventricle about the mitral valve (*l. c.* plate xxii., fig. xxxi.) These hæmorrhages were seldom missed on post mortem examination of the animals affected naturally or experimentally, either with lung disease, with simultaneous intestinal ulcerations, or with lung disease only. During this year I have had the opportunity, thanks to Mr. C. Humphrey, veterinary inspector in Wandsworth, to notice an isolated epidemic in swine-fever that had occurred in the farm belonging to and supplying the county asylum at Wandsworth. This epidemic is instructive because it occurred in a positively isolated locality; that is to say, a locality that does not stand in any communication, either by the attendants or by purchases and introduction of fresh pigs, with the neighborhood. On this farm the number of pigs generally present is just over 100, when fresh farrows about 200. The supply of pork, owing to the large number of inmates in the asylum, is very considerable, and is all derived from the farm.

The last outbreak of swine-fever in this farm occurred in April, 1886, and since that time till March, 1888, no case had occurred. In this year's epidemic the first case was noticed on March 8. Mr. Humphrey, on post mortem examination, pronounced it a case of swine-fever, the intestine and lungs showing the typical disease. Till the middle of April, 61 pigs had been examined, and found affected with swine-fever. Of them only 31 had the intestinal disease (ulcers of large intestine), in 30 the intestine was free of disease, but all 61 had the typical disease of the lungs, and most of those examined in this direction had the hæmorrhages in the endocardium of the left ventricle. Now, it is extremely unlikely that the first pig had two different diseases, and it is also very unlikely that 31 pigs, *i. e.*, those in which lungs and intestine were affected, had two diseases, while 30, *i. e.*, those in which the disease of the intestine was absent, and only the lungs were found affected, had the single disease. These observations harmonize well with those recorded in 1877–78, viz., while the lung affection is constantly present, that of the intestine is absent in a number of cases. Neither

in 1877–78, nor in this epidemic at Wandsworth, was there a single case with intestinal disease only, without the lungs being involved.

Let us hope that much good will be derived from the work done by the Commission, and that while the nature, shape, size and "kicking ability" of the germ, (as says the *Breeders' Gazette*) may be definitely determined, some practical means of prevention may also be developed.

Cresyl or Creoline—Eseridine.—The list of substances and preparations employed for antiseptic purposes is not only already very extensive, but the experiments continually in progress for testing the value of the various compounds which find a place in the armory of the surgeon promise largely to increase their number and value. Among these, a comparatively new article has been introduced into veterinary practice, which is not only of value on account of its antiseptic properties, but possesses an added interest in the fact of its beneficial efficiency as a curative in the treatment of cutaneous diseases. Cresyl or Creoline, the substance in question, is another member of the numerous family of preparations of phenic origin and nature. It is of a syrupy appearance, is blackish in color, resembling creosote in smell, and has an alkaline chemical reaction. It is soluble in alcohol and ether, and forms a milky emulsion with water, a mixture that can be preserved for a long time. It has been used with great advantage by Frehner, Esmarch, Eisemberg, and others, not only as an antiseptic upon numerous pathogenous microbes, but also in cutaneous diseases, and is of so harmless a nature that a five per cent. solution has been administered internally, not only without bad results, but with great advantage. On this account it is recommended by Continental practitioners in the eczema of dogs; in catarrhal affections of the stomach; in chronic diseases of the nasal cavities; in auricular catarrh; and in all the various forms of parasitic affections of the skin. Creoline is an inexpensive article, and if its properties are not overrated, it is certainly entitled to a prominent place among the resources of the veterinary pharmacopeæ. The mention of this new drug suggests another, which we would bring to the notice of our readers as an article which has had a fair and satisfactory trial in Europe by a

number of German practitioners. We refer to Eseridine, a new alkaloid resembling physostigmine, and which like that substance seems to possess valuable properties as a purgative, or as a stimulant of the spine. The dose for horses is one gramme or less, and to cattle two grammes in solution. We are now experimenting with it, and will keep our readers duly informed of the results we may reach. From the reports which have come under our notice, it would appear to possess properties more valuable than those of eserine, with which all practitioners are familiar who have witnessed its good effects in obstinate constipation.

The Review Prize.—We have one word more to say about the next Review prize. The verdict of the committee appointed last year to decide on the competition of the papers presented, has been confirmed and consummated by the delivery of the prize. The same committee has been reappointed for the coming year, since a better selection could scarcely be hoped for, and all things excepting the competing authors are, therefore, now ready. While the judges are waiting and the prize is anxious to reach the hands of the victor, will the contestants hold back? It is a matter of some importance, not, indeed, because of the value of the prize, for that is small enough, but for the honor of the thing, and the good that the winner may do, not alone to himself personally, but to his brethren and the profession in general. The papers ought to be sent in early, to facilitate their publication.

Regulation of the Practice of Veterinary Medicine and Surgery in Pennsylvania.—We reprint the entire bill which is to be presented before the Legislature of the Keystone State, for the protection of the rights of the veterinary profession in that Commonwealth. It is, however, little more than a rearrangement and modification of a bill which had been presented in a previous year, the alterations and improvements being of such a character as would be likely to meet the approval and command the assent of all interested parties. Endorsed, as it is, by the State and the Keystone Veterinary Medical Association, and having besides the support of many of the largest live stock owners and breeders of the State, it is safe to assume that the bill will become a law.

But who, on such a point as this, can tell, in this age of political pulls and influences and legislative manipulations, what its end is likely to be? The appeal presented to the Legislature in its behalf by the Committee is very interesting in its statement and specifications of the value of the claims of the profession, the census of domestic animals in Pennsylvania, with the wealth they represent, and the danger with which human life is beset by the prevalence of contagious diseases amongst cattle and stock animals. The facts are well brought together, which show by implication the value of the public services rendered by the veterinarian, and the obligation resting upon the law-making power to furnish adequate legal protection to the veterinarian profession in the exercise of their functions. An extract of the appeal says:

A momentary glance at the subjoined figures must forcibly impress you as to the important position our State holds in its live stock interests, all of which come under our protecting and fostering care, and must largely be a source of greater or lesser wealth from a physical as well as monetary standpoint to every inhabitant of our Commonwealth.

In Horses we have	700,000	with a value of	$70,000,000
" Cows	"	960,000	"	"	25,000,000
" Cattle	"	700,000	"	"	16,000,000
" Swine	"	900,000	"	"	7,000,000
" Sheep	"	1,250,000	"	"	3,750,000
" Mules	"	30,000	"	"	3,000,000

Representing as a grand total a source of true wealth almost reaching the vast sum of $125,000,000.

Surely if only this constituted our appeal, it would be all-sufficient to commend for it your earnest consideration, but it is a single point at stake, for to the veterinarian, as the truest sanitarian, must soon be commended the preservation of the health and the increased longevity of our people. The appalling ravages committed to-day among our people by the insidious disease Tuberculosis, entailing an annual loss of 50,000 human beings, fully fifty per cent. of whom receive the germs of the disease through the ingestion of meat and milk of tubercular animals, must be a startling fact to your minds. And worst of all, this disease, to a large extent, is the result of foreign importation of improved herds of cattle, which come to our shores without the first rudiment of an inspection or vestige of sanitary police law, to limit these calamitous results. All this arises from the sluggishness of our people in failing to recognize the sore need of an advancement in the veterinary profession, the most flagrantly neglected calling of all the professions in America to-day.

Cruelty to Animals.—Dr. W. S. Williams of Bloomington,

Illinois, sends us the following clipping from a local paper, concerning a charlatan calling himself a veterinary surgeon, who committed probably the most dastardly and diabolical act of cruelty to inoffensive animals which has ever been recorded. The monster has, however, met with proper and well-deserved retribution—if that be possible on earth—for his undescribable depravity.

TAYLORVILLE, ILL., Dec. 11.—On November 3d the Democrats had a big rally in this city. That night fifty or sixty horses were doctored with a syringe with some kind of acid and several fine horses killed. The horse insurance companies immediately put a detective at work and Dr. Charles H. Henderson, of this city, a veterinary surgeon, and his brother were put under arrest. The grand jury returned twenty-eight indictments against them, and this morning the prisoners were brought into court. The doctor made a confession, assuming the full burden of the crime and exonerating his brother. Judge Fouk at once sentenced the prisoner to twenty-eight years in the penitentiary. The sentence was received with approbation. The past history of the doctor is decidedly bad. He had been in the habit for years, whenever hard up, of injecting acid into horses for the sake of a consequent call for his services. This was the motive prompting the crime of November 3d. He was hurried to Chester to escape a mob.

ORIGINAL ARTICLES.

MAD ITCH (common name) ENZOOTIC MENINGITIS (new name).

A paper read before the United States Veterinary Medical Association, by J. C. MEYER, Sr., V.S.

The essay with the above title in the June number, 1888, of the REVIEW, recalled to mind an enzootic disease witnessed in November, 1869, among a herd of oxen kept in a distillery for fattening purpose.

Had I at that time any idea of ever having the honor of reporting cases to a body of educated and scientifically trained veterinarians, I should have been more precise in jotting down my observations. Still, incomplete as it is, I trust it will not be out of place to give a brief account of this enzooty.

Symptoms: Disinclination to all food except hay, which was eaten without relish; a moderate desire for water; rumination suspended; scanty evacuation of semi-fluid fæces; urine clear and of the usual quantity; peristaltic action sluggish.

Some were slightly tympanitic from the start, a condition which was present toward the end of every fatal disease, but intensified. Eyes dull, and often had an anxious look; saliva nearly always dribbling from the mouth. Frequent changing of the extremities, particularly the hind ones. Shivering of the shoulder muscles, as though a chill was constantly running through them. Scratching the withers with the horns; placing the jaw or neck on a fence or any other convenient object, and rubbing it with such madness as to render the skin bloody or ragged. One would stretch his head high in the air and shake it so violently as to convulse the whole fore part of the body. Another hung his head so low as to touch the ground or floor almost without intermission. Still another would lie down, draw one or the other leg toward the body, or strike out convulsively, get up and walk off as though there were nothing amiss. Some had a tottering gait at the outset, and toward the end lost all power of locomotion. Others ran around wildly in their pen almost without interruption, until exhausted. A few hours before expiring, all got down and became unconscious.

Already at the beginning these animals evinced a failing deglutition. Pulse was faint and rose to 100° and over in a short time. Heart beat scarcely perceptible. Respiration irregular in its rhythms, and rose from 40° to 70° and even 80° per minute.

The disease lasted from 12 to 48 hours.

Post mortem examinations:

No. 1. Cadaver tympanitic, a reddish serum flowed from the nostrils, bluish red spots on the schneiderian membrane, eyes very much sunken, rectum protruding. Upon removing the hide a tar-like blood oozed from the vessels, the muscles had a darker, though otherwise good appearance. The stomachs were tolerably well filled with food; the epithelium of the mucous lining of the rumen was so detachable that it fell out with the contents, and its mucous membrane was inflamed in some places, which phenomenon was not present in the other three stomachs. The intestines contained much liquid food (slop) but presented nothing abnormal. Liver was clay colored, its consistence scarcely changed.

A watery blood oozed from its parenchine. Spleen normal in size but somewhat softer; gall bladder entirely empty, the interior inflamed, the exterior emphysematous; right kidney undergoing decomposition, while the left showed no morbidity. The bladder contained a small quantity of clear urine; pancreas shriveled. Lungs small, the right dark red, both spongy. The heart wilted, endocardium of the right ventricle dark red, as was also the inner lower lining of the posterior aorta. Encephalon did not appear changed.

No. II. Œsophagus and pharynx inflamed; lungs, heart and pleura had a hyperæmic hue; liver rather tough; gall bladder full, contents more liquid than usual. Spleen same as in No. 1. Stomachs inflamed; intestines only slightly affected; kidneys flabby; bladder full of turbid urine. Brain normal, as was also the medulla spinalis as far as exposed.

No. III. Revealed similar manifestations as No. II.

No. IV. A young steer slaughtered six hours after showing the first symptoms of disease. With the exception of circulation 100 and respiration 60 to 70 per minute, no important clinical symptoms were manifest.

One stroke felled him, after which he was depleted by the butcher.

The blood was thick and black, ekchymosis in the heart, kidneys spotted red and a bit of partially masticated hay in the pharynx, were the only abnormities observed.

An infiltration of the connective tissue, with a sanginuous colored serum around the pharynx was met with in some of the cadavers.

The owner of these cattle gave to each one not yet affected one-half pint coal oil with seemingly good result. However, a few days before this medication I had the premises thoroughly cleaned, the floor sprinkled with chlorinated lime, the interior fumigated with sulphur, carbolic acid diluted with water given internally, and the cattle turned out into the open air, which latter procedure undoubtedly was most conducive to their well-being.

The public press termed this plague rinderpest. The clinical symptoms and post mortem results proved this nomenclature erro-

neous. The cause, according to my judgment, was in the stable atmosphere, which was poisoned by swine suffering with abdominal typhus, to which about a dozen per day succumbed. Several hundred of these grunters were housed under the same roof with the cattle, and only separated from them by a four-foot-high fence.

A colleague who was also consulted attributed the disease to the feed, (slop) which, however, is refuted by the fact that the surplus slop, during the prevalence of this enzooty, was taken away by the neighboring dairymen, as they had done for years, and fed to their cows, without experiencing the least ill effect.

In the latter part of November and beginning of December, 1871, I again had occasion to record a similar complaint in another distillery stable, about a half block from the one mentioned above.

To give the details of these cases would be merely a recapitulation of the above, as the type of the disease deviated but little, the only noteworthy difference being the shorter duration of suffering, thirty-one hours being the maximum.

One day I found the premises vacated, thus ending my observations. The majority of the cattle being fat, or in good condition, it may be readily surmised what became of them. At that time the enforcement of sanitary laws was a dead letter.

As to the probable cause alluded to before—This second lot was exposed to similar influences as the first, so far as the inhalation of impure air is concerned, though the pens of these cattle were separated from those of the hogs by a frame partition, but connected by a door. Through this opening the men who had charge of the stock moved to and fro all day, thus allowing the air impregnated with unhealthy vapors and miasma arising from the exhalation and fermentation of the excrements of these hogs afflicted with the same plague as the first lot, to pass into the oxen's stable, rendering the atmosphere which the cattle were obliged to inspire so noxious that the fatal result ensued, as I imagine, by a decomposition of the blood and parese of the nervous system.

My opinion was based mainly on the fact, that those standing

nearest the aperture leading to the swine apartment fell victims to the ailment first. There it was where the materia precaus was most condensed, therefore more apt to unfold its deadly effect, while in the center and further off it was more diffused, thus the victims more scattered.

According to my views, this morbidity belonged in the category of dyscrasie of the blood, as intimated in the post mortem report, the blood being dark, thick, clammy, with little inclination to cogulate—a reddish discoloration of the intima of the posterior aorta, and ecchymosis in and on the external surface of the heart. This vascular condition was found more or less in the slaughtered animals as well as on the cadavers, and might be considered a discriminating criterion.

The tympanitis which was always present, varying in intensity and locality, and the partial dysphagia, indicated unmistakable participation of the nervous system. The sanguinous disturbance, however, was most conspicuous. To what other morbid function may the extreme desire of these animals to rub themselves be attributed than to the sensory organ, caused by alteration of the blood.

Had not A. Westerner found the meninges inflamed in his patients, I would feel inclined to doubt my theory, especially since I read an article by Prof. Vogel, wherein the cerebrum showed very little or no morbidity.

A few years after having made the above observations I had under treatment a cow with genuine spinal meningitis (Genickskrampf) when I found myself induced to change my treatment. Therefore I searched the Repertorium (rich in cattle pathology) expecting to find the desired advice. I met with cases corresponding to mine in symptomatology, but the therapeutics were wanting. Thus I was not helped out of my dilemma. Nevertheless I was repaid, inasmuch as I found the very interesting article referred to above, by Prof. Vogel, on "Spinal meningitis in cattle," wherein all the inmates of a stable became affected almost simultaneously; the disease was of four to five days duration without febrile reaction. The post mortem examination revealed that neither the substance of the brain nor its meninges were much

affected, but a considerable exudation of a thin, reddish, turbid serum was found all along the spinal cord, as also an acute inflammation of the meninges of that region, most prominent from the first to the fifth vertebræ, and gradually disappearing in both directions, toward the brain as well as toward the loins; a pathological lesion overlooked by other noted veterinarians. It may be they omitted to inspect the spinal cavity for the same reason I did, namely, that the brain looked too well to throw suspicion on the medulla spinalis.

PATHOLOGY OF EQUINE SYPHILIS.

(From the German, by Thanhoffer.)

A synopsis of a paper read before the Illinois State Veterinary Medical Association by W. L. Williams.

The spinal cord exhibits changes, varying in degrees as the disease is in its first, second, or last stage of development, and also varying in different parts of the cord.

One of the most constant changes consists of an engorgement and multiplication of the vessels of the pia-mater, thickening and turgidity of the pia-mater itself, and serum-infiltration into the sub-arachnoid and sub-dural spaces. These changes are most evident in the lumbo-sacral region, slowly diminishing forwards and finally disappearing; in some cases, in the cervical portion.

The appearance of transverse sections of the cord is usually normal in the medulla and cervical region, but progressing backwards shows more and more red, hæmorrhagic spots, until in the region of the conus terminalis the gray substance shows a reddish-yellow color due to pigment-degeneration. The two sides—both white and gray matter, especially the latter—lose their symmetry; —that is, one side is larger than, or differently shaped from the other.

In some sections, in place of the gray matter, we find a soft, pap-like mass, consisting of nerve-cell debris, while in other places, this degenerate mass has been absorbed, leaving in its place open cavities extending for a considerable length.

In some cases, one of the gray cornua may be found shrunken to one-fifth its normal size; while in others, the gray cornua and commissue are represented by a shrivelled, fibroid mass,–the comissue, in some cases, having wholly disappeared, as has also the central canal.

The author's autopsical notes offer no essential differences from those notes in my report. (See current vol. of REVIEW).

The author confines his microscopical study of the central nervous system to the spinal cord, but thinks it probable that the encephalon may show important changes also, in far-advanced cases.

Even in early stages of the disease, the nerve-cells of the cord show a loss of contour in their nuclei, division of the same, appearance of granules in the cell-contents, and loss of the nuclei by this granular degeneration. Other nerve-cells undergo pigment degeneration, others suffer from the invasion of migratory cells, and in others the nuclei atrophy, leaving vacuoles.

The protoplasmic prolongations, or poles of the cells, undergo similar changes to the cell-contents and are frequently destroyed, or, while undergoing degeneration, assume a nodulated appearance.

The ground-substance or neuroglia assumes a sieve-like appearance owing to numerous small cavities, either partly or wholly empty, probably due to atrophy, to destruction and absorbtion of the nerve-cells, or to enlargement of the pericellular spaces.

The capillaries of the neuroglia are greatly widened, either uniformly or aneurismally, while in other cases, through embolism or external pressure, the vessel wastes away to an impermeable fibre.

Thrombi of pigment-cells and of white blood-cells are seen.

Large and small blood extravasations occur in the perivascular spaces, and, especially near the large fissures, are to be seen large and small granular, degenerating masses whose absorbtion probably leaves vacuoles.

Other lumbo-sacral sections show in place of the central canal, a lentil-sized, open space, extending through many suc-

cessivs sections; and in the posterior gray cornua are seen cavities, 1. cm. broad, extending through many sections and destroying the cornua. Dr. Thanhoffer thinks the former due to a tubular, or *syringo-myelitis*, following extravasation around the central canal,—the inflamed tissue degenerating and being absorbed, leaves the vacuoles.

New formations of connective tissue occur in both white and gray substance, and in other cases, the posterior cornua are replaced by shrivelled connective-tissue bands.

The spinal meninges sometimes show congestion and the same changes of blood-vessels noted elsewhere in the cord.

In a few cases, the nerve-roots showed atrophy; fatty, or connective-tissue degeneration, and loss of axis cylinder.

The cells of nerve ganglia undergo essentially the same changes as the cells in the spinal cord. The ischiatic nerves show no marked changes.

The "*thalerflecke*," or sharply-defined skin swellings, so characteristic of equine syphilis in all its stages, are due mainly to disease of the corium, and consist of a saturation—principally about the sweat glands and *arrectores pilorum*—with small granules, apparently due partly to cell-migration and partly to cell-proliferation. The cause of these *thalerflecke* Dr. Thanhoffer believes to be the aforementioned changes in the cord, its roots and ganglia. Recent anatomical investigations have shown that the nerves of the skin and muscles of the rump take their origin from the lumbar region, that place from which also the genitals and posterior extremities receive their innervation; indeed, according to the more recent investigations of Stricker, Luchsinger and others, from here spring also the vasomoter nerves of the extremities. It is further noteworthy that the *thalerflecke* occur mainly on the rump and thigh (and further of flank W.), and are rarely seen on the head and neck; but this may happen without contradicting the foregoing, since in severe cases the cervical cord and, in the last stages, even the medulla or the brain itself may become affected. But *thalerflecke* are by far more common on those parts receiving their innervation from the lower dorsal, or lumbo-sacral cord, where in all stages of the disease by far the most serious changes are noted.

Dr. Thanhoffer draws a sharp distinction between the mild venereal disorder (chancroid), and equine syphilis (maladie du coit, or "zuchtlahme"), averring that the local symptoms as shown by the external genitals are of little diagnostic value and would only pronounce the case one of equine syphilis when, in addition, the animal shows abnormal sensitiveness of the loins, lameness and *thalerflecke*. He has seen but few eruptions on the external genitals, and those were ephemeral and of little or no diagnostic value.

Other changes of the external genitals, described in my report, are not mentioned by Dr. Thanhoffer.

The Doctor found several forms of germ-life in various diseased tissues, but offers no definite conclusion as to the part played by any one of them.

CASE REPORT OF INTESTINAL CALCULI.

A Paper read before the Maryland State Veterinary Medical Association by T. F. BARROW, V.S.

The subject, a gray mare eleven years old, sixteen and a half hands high, weighing about fourteen hundred pounds, the property of P. T. George & Co., was brought to my infirmary at eight o'clock Tuesday morning, December 11th, suffering with the following symptoms: enteric pains of a recurrent character; temperature, 101⅘° F.; pulse, 48; respirations slightly accelerated; considerable abdominal distention. Upon making inquiries relative to the prior condition of the mare, ascertained that she had suffered for some considerable time with irregular bowels, and her appetite was very capricious. Made a rectal examination, removing some dry hard fœcal matter; the animal had occasional pains and no movement of her bowels, for three days previous; no appearances of hepatic complication. Diagnosis: Intestinal obstruction. Gave the following drench: ol. lini. ℈i, pulv. barb. aloes. ℥ ss, soda bicarb. ℥ ss; administered an enema and placed the animal in a loose box. Six hours later, finding the mare very uneasy, gave her a hypodermic injection consisting of four grains

of sulphate of morphia, combined with a quarter of a grain of sulphate of atropia and gave another enema. No further symptoms of pain were observed during the balance of the day. Wednesday morning, December 12th, found the mare suffering severe pain, the paroxysms occurring more frequently; bowels still unmoved. Gave ℥i of aloes, ʒi fluid ext. nux. vomica, ʒi fluid ext. belladonna, fifteen minims of fluid ext. capsicum, applied blankets wrung out of hot water to abdominal region and administered another enema. Repeated the hypodermic injection of morphia and atropia, which again appeared to afford the animal great relief, which continued during the rest of the day. Thursday morning, December 13th, found the mare's condition as follows: Temperature, 102⅘°; pulse, 60; respirations, 20; increased abdominal tension, almost continual pain; bowels still unrelieved. Suspecting the presence of calculi, called in Dr. William Dougherty for consultation. That gentleman considered the case to be one of mechanical obstruction due to the presence of a calculous deposit in the intestines, and advised that a trial be made, of the eserine and pilocarpin treatment. Accordingly at ten o'clock Thursday morning he administered one and a half grains of eserine combined with two grains of pilocarpin. The following effects of the medicine were noted: profuse salivation ensued in twelve minutes; first discharge from the bowels in forty minutes; second in fifty-two minutes; third discharge in two hours. After that the cathartic effects of the medicines gradually diminished: the usual physiological action of pilocarpin on the skin was but feebly marked in this case. Six hours after the administration of the medicines the temperature was reduced to 101⅕°; pulse, 48; respirations nearly normal and no apparent pain. From that time forward the mare's condition varied from day to day. She lingered along until the 28th day of December; during that time her treatment was chiefly directed towards the symptoms as they presented themselves. At ten o'clock on the night of December 28th, it being the eighteenth day since her reception at the hospital, she looked brighter and more cheerful than she had for several days previous; temperature, 101⅕°; pulse, 47; respirations tranquil; she drank some oatmeal gruel. Next

morning at 6 o'clock the mare was found dead. Upon post mortem examination found the large colon ruptured near the pelvic flexure; laying right in the breach found two calculous balls embedded together; further on toward the gastra-hepatic curvature found the third and last one. The weight of the largest ball was five pounds, greatest circumference twenty inches; the smaller ones weighed respectively three and one-half and three pounds. The stomach, small intestines, cœcum and double colon were completely packed with food, (and ingesta) the single colon merely containing some fluid. The mucous surface covering the whole extent of the intestinal tract was much inflamed. No appreciable lesions of the other organs were observed, so far as a superficial examination revealed. Upon a review of the case I am inclined to think that the rupture in the bowels occurred during the night of the 28th, or very early next morning, the bowel giving away in consequence of the great pressure brought on it by the immense accummulation of food and ingesta, the mare speedily dying of collapse. In support of this view I will add that appearances about the ruptured portions of the bowel indicated it to be of recent origin. In regard to the therepeutical action of the eserine and pilocarpin, from the rapidity in which it excited the peristaltic action of the intestines, after the continued failure of other medicines, I feel convinced that it might often be advantageously employed as a remedial agent in veterinary practice.

ESERINE.

A Paper read before the Ohio State Veterinary Medical Association by W. R. Howe, V.S.

Mr. Chairman and Gentlemen:

Lately we have heard and read a great deal about the use and usefulness of the drug eserine.

Eserine, or physostigmine, is the alkaloid of the seed or bean of Physostigma venenosum, or calabar bean. The bean is kidney shaped, with a furrow running longitudinally along its convex margin, about an inch in length and three-fourths inch wide, very

hard and shiny, brownish-red in color. Within the shell is a kernel consisting of two cotyledons, hard and white.

The alkaloid was first isolated about 1864, but has never been in very general use in the practice of medicine except in the treatment of tetanus, and for the purpose of contracting the pupil in ocular practice.

A French surgeon, I think, first advocated its use for the treatment of colic in horses about the year 1883 or 1884. Soon afterwards Prof. Liautard brought it to the notice of the profession in this country through the REVIEW, and your servant is glad to say has used it ever since with gratifying results.

The first knowledge we have had of its use was to poison criminals in Africa, and it is said to have always proved fatal except when vomiting occurred.

It is said that nineteen seeds when made into an infusion will kill a man in an hour. The principal symptoms are failure of muscular power of all parts of the body, and death perhaps from paralytic asphyxia, muscular tremor diminished, reflexed action and contraction of the pupil; the mind is not affected; there is purging and often vomiting, and powerful peristaltic movement. In man, there is a feeling of faintness, a loss of vision, extreme weakness, slight nausea, pulse irregular, mind normal, and no pain. Large doses paralyze or retard, while small doses increase intestinal peristalsis and bronchal movements. Hypodermic injections of atrophia is a very sure antidote. The alkaloid is the preperation mostly used, and if fresh and pure is very positive in its action. I fear a poor or decomposed article or a lack of knowledge of the dose is the cause of the failure of good results. Eserine if exposed to light and air will lose its potency rapidly.

A solution decomposes, turns first red, then purple; in this state does not lose its power to contract the pupil, but is not reliable to overcome spasms of tetanus or stimulate peristalsis.

In the treatment of tetanus in man, eserine is given in one-eighth grain doses every two hours until the spasm is relieved, when the dose is lessened. For the horse suffering with tetanus give from two to four grains per mouth, or one-half that amount hypodermically, and perhaps is the best remedy we use in the

treatment of this disease; it lessens or overcomes the spasms and improves the action of the bowels. It is in cases of indigestion, colic, flatulency from any cause, obstinate constipation, azoturia, or almost any case where it is necessary to get a prompt action of the bowels, where this drug is of most value to the veterinarian. In acute indigestion in the horse, a hypodermic injection of from one-fourth to three-fourths grain, according to the patient and case, relieves the pain by overcoming the spasmodic condition, stimulates the flow of the gastric secretions, thus aiding digestion, stopping fermentation, and stimulates natural peristalsis even when the bowel is paralyzed by distension, thus promptly evacuating the bowels, not only of fæces, but flatus, and removing not only the cause of the trouble but the trouble itself, in less time than by any other known treatment. In constipation, if given in small repeated doses, will often give complete relief. I have had excellent results in treating azoturia with this drug by giving one grain and following with one-half grain doses every half hour until the bowels moved freely; it not only evacuates the bowels, but relieves the spasmodic condition of the glutial muscles in from one to three hours in moderate cases. I have used it in several cases of immobility to evacuate the bowels, which it has never failed to do. There is generally considerable improvement of the other symptoms, but I always follow it with philocarpine in about fifteen grain doses hypodermically, generally with pleasing results. I have never combined eserine with philocarpine.

Where a cathartic has failed to act in time, a hypodermic of eserine will generally bring about the desired result. To dogs suffering from fits caused by constipation, one-thirtieth to one-tenth grain hypodermically will often give complete relief.

In parturient apoplexia in cows it appears to give relief, but so far as my experience has gone it has been merely temporary, as it appears to soon lose its effects. Drs. J. M. Weaver and C. C. Meyers, both physicians of good standing in Dayton, Ohio, report that they have used eserine with excellent results and prompt relief, where other remedies had failed, in flatulency following child-birth.

The great object in advocating this drug in the treatment of

colics, etc., is that many able veterinarians have taken exception to the virtue claimed for it, while I feel confident it has all the merit, when properly administered, its advocates claim for it. Until this drug was introduced, the general principle of treating colic, etc., was direct opposites, such as opium in some form, and oils, aloes, etc., one directly counteracting the other, which appears to me as being inconsistent.

UNUSUAL SEQUEL OF TRACHEOTOMY.

A Paper read before the Illinois State Veterinary Medical Association, by DR. J. MCCLINTOCK, V.S.

Mr. President and Gentlemen:

My motive is to bring before the profession something new and experimental on my part, which I am pleased to say has surpassed my expectations.

In June last I was called to see a valuable filly about six weeks old suffering from strangles, the abscess having only appeared in the form of a tense swelling, not large or well-defined, with difficult breathing. I applied a stimulating liniment, steamed and used warm poultices of bran; good care, gave a few doses of febrifuge medicine and tonics. Paid another visit twenty-four hours after, and found the little animal nearly suffocated, when I concluded the only way to save life or prolong it was to perform the operation of tracheotomy, which I proceeded to do. The trachea being too small to admit a tube of the usual size, I introduced a wire suture through the muscles on each side and tied over the neck, but finding that air was not admitted sufficiently I cut one ring of the trachea across, and removed a quarter of an inch from each end, after which it breathed freely. About six days after I opened the abscess and closed the wound in trachea by sutures. About three weeks after it was in the field and apparently well, when a cold rain and thunder storm came up and got the filly thoroughly wet, after which difficult breathing again took place, and it became necessary to perform tracheotomy. This time I introduced the tube, which was

allowed to remain in five days, when I removed and closed the opening. In about three weeks difficult breathing came on, and finding the obstruction was at the point where I had operated, and judging there was something unusually wrong, I cut through, and found the cartilages had taken on an abnormal growth which almost closed the trachea. Introducing the tube I was able to allow breathing to take place, but when removed collapse would follow. Knowing something would have to be done to overcome that difficulty, and not finding any information in any of our works, I was thrown on my own resources. Procuring a silver plate four inches long and three and a half inches wide, I formed it into an incomplete tube having two clasps, one and a half inches apart in front, and fastened with silver rivets. All being in readiness I dissected round the trachea to the back part, removing three rings completely, except a small portion at the posterior part which seemed to be healthy. I used cocaine as an anæsthetic. I then inserted the tube upwards, bringing it back to place, clasping over the upper and lower rings, and closing the opening with silk sutures. After allowing the filly her freedom, found all difficulty of breathing had been overcome, never missing a feed, being apparently healthy, excepting the wound. Inside of four weeks the wound was completely healed with a slight enlargement, over which I applied an absorbent blister, which reduced it completely. I have frequently seen it run fast when playing, and it is impossible to notice from the breathing that she carries a silver tube in the windpipe.

In conclusion, in giving this communication I hope I have at least advanced an idea that may be of some benefit to our profession.

Rabies in Fœtus.—According to M. G. Zaigari, the bulb or spinal marrow of fœtus of rabid females is not virulent—neither is the milk or the amniotic fluid of the mother—neither any of the fluid of the fœtus. In other words, in the rabid female, the organism of the fœtus is not contaminated.— (*Revue Scientifigue.*

SNAKE BITE AND ITS ANTIDOTE.—VII.

BITE OF THE GILA MONSTER.

By H. C. Yarrow, M.D., Curator Dept. Reptiles, U. S. National Museum.

(*From Forest and Stream.*)

(*Continued from page* 459.)

On February 7, 1883, Drs. S. Weir Mitchell and Edward T. Reichert read a paper before the College of Physicians of Philadelphia, entitled "A Partial Study of the Poison of *Heloderma suspectum* Cope, the Gila Monster," in which the statement was made that after several experiments with the saliva of this reptile, they had come to the conclusion that it possessed strongly venomous properties. This had been suspected by some naturalists, from the fact that this lizard possessed anterior deciduous grooved teeth, which communicated by ducts with large glands near the angle of the lower jaw. All sorts of conflicting reports have been published from time to time regarding this reptile, some observers claiming that it is deadly venomous, others believing it perfectly harmless; in fact, in some parts of the Southwest it was kept as a household pet. Bocourt and Dumeril mention the bad name it has in Mexico, and Sumichrast states that the natives hold it in the utmost terror, and consider it as more fatal than any serpent. A fowl bitten by it died in twelve hours, with bloody fluid exuding from its mouth, the wound being of a purple tint. A cat bitten was very ill, but recovered, remaining thin and weak. Sir John Lubbock reports that a *Heloderma* sent him killed a frog in a few minutes, a guinea pig in three minutes. Dr. R. W. Shufeldt, of the United States Army, reports serious symptoms after having received a bite on the right thumb, but no permanent disability followed.

The writer has for several years endeavored to trace out an authentic account of death resulting from the bite of the Gila monster, and the following is all the evidence in his possession. The first account was secured through Dr. S. P. Guiberson, of Ventura County, Cal., and is as follows:

"G. J. Hayes, a miner in from the Frazer mine, says that in

1878, or '80, in Tip-Top Mining Camp, Arizona, he saw a Gila monster bite a man by the name of Johnny Bostick, who at the time was under the influence of liquor. That he took hold of the *Heloderma* and shoved his finger at it, and the reptile seized his finger, and its jaws had to be pried open before he could disengage his finger. The *Heloderma* was 22 inches long and lay on the card table. It was also seen by a man named Lou Smith, and a lot of Italian miners. Immediately Mr. John Bostick drank large quantities of liquor, and from the effects of the bite one side was paralyzed, and he died in about three months, April 19, 1878. I hereby certify that the above statement is correct.

(Signed) G. J. HAYES."

Subscribed and sworn to before me, a notary public, this 19th day of April, 1886.—S. P. GUIBERSON, Notary Public for Ventura County, Cal.

The second affidavit, which follows, differs somewhat from the first, but relates to the same individual. The query is, was the *Heloderma* bite the cause of death or was it the whiskey so lavishly administered.

STATE OF CALIFORNIA, County of Ventura.—R. C. Carleton who first being duly sworn, deposes and says that he was present at the time and knows of his own knowledge, that Johnny Bostick, of Tip-Top, Arizona, was bitten by a Gila monster, from the effects of which he afterwards died. That the Gila monster seized one of the fingers or thumb of the said Johnny Bostick, and that in order to disengage the reptile the boys cut its head off. That deponent thinks it occurred in 1883. Subscribed and sworn to before me this first day of December, 1886.—R. C. CARLETON.

S. P. GUIBERSON, Notary Public. (A true copy).

In conversing with Dr. F. V. Ainsworth, U. S. A., who has had a large experience in Arizona, upon the subject of the bite of the Gila monster, he informed the writer that he had heard of a case of death from the bite of this reptile, but that his brother Frank K. Ainsworth was conversant with the details, and he obligingly offered to write and procure full particulars. From the letter which follows, it will be seen that the case is reported by Dr. G. E. Goodfellow of Tombstone, Arizona, to Dr. Ainsworth:

TOMBSTONE, July 23, 1887.—*My dear Ainsworth:* I at last am ready to reply to your letter concerning "snakes." The Fairbanks case was as follows: Yeager,

about 55 years of age, was in May, 1885, in Fairbanks, Arizona Territory, bitten by a Gila monster. He, to prove the innocuousness of the beast, put his left thumb and forefinger into his mouth, and he was bitten. He was immediately loaded to the guards with whiskey—it happened in a saloon—and he seemed all right, save for a slight numbness and swelling in the hand and arm. He sat down in a chair in the saloon, talked with those around for an hour. The crowd thinning out, he seemed to drop asleep. In about an hour more, the saloon keeper spoke to him, but not making a reply, he was taken hold of and found to be dead. I was sent for, but before I could leave received a second message announcing his death. He was a man addicted to the use of liquor, and so far as I can ascertain had been on a prolonged spree for months. Whether he died of the reptilian poison or a combination of whiskey, disease and Gila monster I cannot say.

About four years ago on the lower San Pedro I was informed that a man had been bitten in the foot while in the field and died within three hours. I could neither prove nor disprove the case.

That the Gila monster is a poisonous lizard cannot now be denied. That its bite is fatal uniformly is open to discussion. I have always considered that they were a trifle more poisonous than the scorpion, tarantula and centipede, not even approaching the rattlesnake, and I have been accustomed to regard the bite of the three first mentioned as little worse than the sting of a bee or wasp. I have known of bee stings killing, but though I have seen many bitten, and have had a personal experience as well, never have I known of a death to occur from the bite of a scorpion, tarantula or centipede. That they can kill under certain conditions I am convinced. * * * Very respectfully, G. E. GOODFELLOW.

These accounts are the only authentic ones the writer has been able to gather, after ten years of constant labor and research.

On the other side it may be stated that Mr. Horan, the superintendent of the National Museum, has been bitten several times by this lizard without serious results following.

The first experiment of Mitchell and Reichert was as follows: "About 4 minims (of saliva) was diluted with one-half cubic centimetre of water, and thrown into the breast muscles of a large strong pigeon at 4:25 P.M. In three minutes the pigeon was rocking on its feet and walking unsteadily. At the same time the respiration became rapid and short, and at the fifth minute feeble, at the sixth minute the bird fell in convulsions with dilated pupils, and was dead before the end of the seventh minute. The first contrast to the effect of venom was shown when the wound made by the hypodermic needle was examined. There was not the least trace of local action, such as is so characteristic of the bite of serpents, and especially of the *Crotalidæ*. The muscles

and nerves responded perfectly to weak induced currents, and to mechanical stimuli. The heart was arrested in the fullest diastole, and was full of firm black clots. The intestines looked congested. The spine was not examined." A number of other experiments made by these experienced investigators left no doubt in their minds as to the terribly venomous character of the *Heloderma* saliva.

Before giving notes of the experiments made at the National Museum, it may be well to describe the process by which Drs. Mitchell and Reichert obtained the saliva, and our own. The first consisted in "provoking the reptile to bite on a saucer edge, which it was not disposed to do. When once it had seized the saucer it was hard to pull it away, so powerful was the grip of the lizard's jaws. After a moment a thin fluid-like saliva dripped in small quantities from the lower jaw. It was slightly tinted with blood, due to the violence of the bite, and it had a faint and not unpleasant aromatic odor. The secretion thus collected from the mouth was distinctly alkaline in contrast to serpent venoms, which are all alike acid."

Our own method consisted in forcing the lizard to bite upon a piece of artist's gum, which being elastic and yielding, did no injury to the teeth and afforded a fair hold. So soon as the saliva appeared to be flowing it was carefully swabbed up with pledgets of absorbent cotton, which were washed out with glycerine, and in this way we had no difficulty in securing all of the fluid needed. It was preserved in glycerine the same as our serpent venom.

The first experiment, November 8, 1887, was as follows:

Nov. 8, 1887—12:17 P.M.—Held left hindleg of rabbit to *Heloderma*, who grasped it with his teeth, and held on for three-fourths of a minute, biting fiercely.

1:30 P.M.—Rabbit a little lame, but enjoyed eating as much as before.

3 P.M.—No result so far.

Nov. 9.—Rabbit appears to be perfectly well with the exception of a very slight lameness of the left hind leg, due to the lacerated wound made by the lizard's teeth.

12:30 P.M.—Held leg of another rabbit near the mouth of a

different *Heloderma* from the one used in the former experiment, and irritated the reptile until he took hold. In this case the rabbit's leg was seized several times and bitten to the bone, the reptile being unwilling to let go. There was a copious flow of saliva, which ran over the teeth wounds and was rubbed in by the experimenters, care having been taken to remove the hair from the rabbit's leg. In fact this was done in every case, as it was feared the thick fur might prevent the saliva from reaching the wounds.

3 P.M.—No result.

Nov. 10.—No result.

Nov. 11.—No result except slight lameness.

Nov. 17—12:45 P.M.—Injected three minims of solution of *Heloderma* saliva in leg of hen (brown). Respiration somewhat increased, but no other symptoms noticed.

2:30 P.M.—Fowl in about the same condition; respiration slightly increased and breathes with beak partly open.

Nov. 18.—Fowl appears to be entirely recovered.

Nov. 20.—Chicken completely recovered.

In this case the increased respiration was probably due to the fact that the chicken being a very noisy one it became necessary to compress its throat to avoid annoying other workers in the Museum.

Nov. 22—12:19 P.M.—Injected ten minims of the solution of *Heloderma* saliva and ten minims of water into left breast of another hen. This chicken was very thin, but perfectly healthy, and had been used for two rattlesnake venom experiments with ligature and recovered.

12:25 P. M.—Increase of respiration, wants to lie down, defecates, feathers ruffled.

12:30 P. M.—Panting heavily; peculiar outward and inward movements of rectum; eyes closed and very drowsy.

Nov. 28—Chicken entirely recovered, and has been so for several days.

12:35 P. M.—Injected 25 minims of solution of *Heloderma* saliva into left leg of another hen.

12:40 P. M.—Hen lying down, respiration quickened, and breathes with mouth open.

2:30 P. M.—Chicken still lying down and breathing fast.

Nov. 29—11 A. M.—Chicken in same condition as yesterday; will not eat.

Nov. 30—11 A. M.—Chicken improving; eats a little.

Dec. 1—11 A. M.—Chicken appears to be all right; eats well.

Dec. 2—11 A. M.—Chicken entirely recovered.

Dec. 5—12:15 P. M.—Injected 25 minims of solution *Heloderma* saliva into breast of chicken, same quantity into right leg, same quantity into left leg, making in all 75 minims. In a short time fowl had copious water discharge *per anum*, with a curious oscillatory movement of that opening.

12:25.—Chicken lying down with its feathers much ruffled.

Dec. 6—Chicken found dead. This fowl had been used for previous experiments, and was very thin and weak, and it is by no means certain whether the copious diarrhœa probably produced by the glycerine did not cause its death.

Dec. 5.—Forced largest *Heloderma* to bite a chicken on the leg (from which feathers had been removed) several times. There was a copious flow of saliva and many larcerated wounds.

Dec. 6.—Chicken seems perfectly well, no swelling or local manifestations whatever.

Dec. 7.—Chicken perfectly well.

Fearing that possibly the glycerine solution of venom (2drs. of saliva to 6drs. of glycerine) was too weak or had lost its strength through keeping, on Dec. 8 the following conclusive experiment was performed:

12:15 P. M.—Forced open the jaws of the largest and most savage *Heloderma* and collected upon a piece of absorbent cotton from ten to fifteen drops of fresh saliva. An incision was made in the breast of a chicken and the cotton placed in it and allowed to remain.

Dec. 10—The chicken appears perfectly well; no sign of indisposition or local manifestations whatever. Wound appears to be healing kindly.

Jan. 20, 1888—Wound in breast has been healed for some time, the cotton remains where it was placed and can be felt encysted under the skin and has produced no injury.

April 4.—The chicken alive and healthy with the cotton still *in situ*.

This experiment would seem to show that a large amount of the *Heloderma* saliva can be inserted into the tissues without producing any harm, and it is still a mystery to the writer how Drs. Mitchell and Richert and himself obtained entirely different results. Were it not for the well-known accuracy and carefulness of Dr. Mitchell it might be supposed possibly that the hypodermic syringe used in his experiment contained a certain amount of *Crotalus* or cobra venom, but under the circumstances such a hypothesis is entirely untenable. Moreover no local symptoms were manifested, as would have been the case had venom been inserted. Both the Gila monsters were good-sized active specimens, full of vigor, secreting a considerable amount of saliva, and we can hardly suppose that the short captivity they had suffered could have so modified their saliva as to render it innocuous.

(*To be continued*).

EXPERIMENTAL PHYSIOLOGY.

THE GRAPHIC METHOD FOR THE STUDY OF THE PAROTID SECRETION IN THE HORSE.

By Prof. Kaufman, of Alfort.

The markings obtained by the Professor have confirmed the following characters, already indicated by Colin, in his experiments through the means of simple fistulas:

1st.—The parotid secretion in the horse is intermittent.

2d.—It is entirely stopped between meals.

3d.—It takes place through both glands during mastication.

4th.—But at that time it is equal in both.

5th.—It is more abundant on the side where the animal masticates, and less on the opposite.

6th.—If the mastication passes from one side of the mouth to the other, the changes in the abundance of the secretion occur in the same manner.

7th.—Each movement of the jaw corresponds with a variation in the flow of saliva.

The advantages obtained in this physiological experiment are evident, as with it the ynacegen of mastication and insalivation are strictly normal, during the entire meal.—*Journal des Soc. Scientifique.*

RESISTANCE OF RABID VIRUS TO DESICCATION AND TO CADAVERIC DECOMPOSITION.

By Mr. Galtier.

To the questions whether, first, does the saliva of a rabid animal, deposited on rags or any other solid substance, and dried in the air, retain its virulency, and does it keep long; and, would the contact of such soiled objects with a fresh wound or any absorbing surface be dangerous to man? Second, Does the virulency long resist the cadaveric decomposition in buried carcasses? Mr. Galtier reports the six following experiments:

1st.—The cadaver of a rabid dog, being buried for twenty-seven days, and the bulb inoculated to two other dogs and to two rabbits—one of each species of animal died with rabies after twenty-nine and thirty-three days; the other two animals resisting.

2d.—Of four rabbits and four guinea pigs which were inoculated with the bulb of a lamb that had died from rabies and been buried twenty-nine days, only one pig became rabid.

3d.—The bulb of a rabid lamb buried twenty-three days killed one dog and a guinea pig with rabies.

4th.—After a burial of thirty-one days and notwithstanding an advanced state of cadaveric decomposition, the bulb of another rabid lamb gave the disease to a guinea pig.

5th.—Two guinea pigs, inoculated with the bulb of a rabid rabbit buried for twenty-three days, contracted the disease. In this experiment also the nervous centres were much decomposed.

6th.—The nervous centres in a state of putrefaction of a dog suspected of hydrophobia and buried for forty-three days were inoculated to two guinea pigs, which developed the disease in twenty-three and twenty-six days, and their rabies was also trans-

mitted to other pigs. From the above Mr. Galtier concludes that the rabid virulency can be preserved for fifteen, twenty, twenty-five, thirty, thirty-five, forty and forty-five days, in buried cadavers, and perhaps longer, and that in doubtful cases inoculation of the bulb of animals buried for these periods of time is indicated.—*Ibid.*

INTRODUCTION OF INFECTIOUS GERMS THROUGH INTACT SKIN.

By Mr. Schimmelbush.

The intact skin has always been considered to be an impervious obstacle to the introduction of infectious germs. But Mr. Roth, a pupil of Koch, has succeeded in developing a generalized infection in animals, by rubbing the skin with the bacilli of anthrax, and those of the septicemia of mice. Mr. Schimmelbush has attempted similar experiments in human moribunds. During one or two minutes he had the skin rubbed with cultures of staphylococcus, and obtained the development of pustules of impetigo, the germs having penetrated through the hair follicles. Similar results were obtained upon stumps of amputation. In rubbing rabbits with cultures of pathogenic bacilli, he succeeded in obtaining a general infection on only four out of fourteen animals, while Mr. Roth obtained the same result on four out of five animals.—*Ibid.*

AMERICAN VETERINARY COLLEGE.

HOSPITAL DEPARTMENT.

A CASE OF "BREAK DOWN" IN A FORE AND HIND LEG.

By Dr. W. Tritschler, House Surgeon.

The subject was a gray coach-horse, eight years old, which had been laid up about three weeks, for a "soreness" which is said to have been somewhat erratic in its manifestation and obscure in nature.

When put to work for the first time on a short trip, and after being out but a very short while, he began to go lame on the off

hind leg: the driver stopped and examined the foot, but failed to detect anything amiss at that point, and upon continuing the journey in a little while the horse began to manifest irregularity on the near fore extremity. Both of these conditions rapidly became so aggravated (falling down several times) that he was taken out of harness and placed in the stable, getting up and lying down repeatedly during the night.

When I visited him the symptoms looked very much like those of azoturia and when with them the subject was carefully considered, I was much tempted to make my diagnosis in that direction. It being difficult to make a minute examination, as the patient was in dark stall of a cellar stable, and having no catheter to examine his urine, the animal was placed as comfortable as possible in his stall and seen the next morning in company with Dr. Coates. On that day he was found lying down. Rising with comparatively little assistance, his lameness was very evident and peculiarly characteristic. Unwilling to move, when made to do so he moved forward with very short steps, hesitating; the toe forward, almost the walk of a laministic patient. The feet were cool, the fetlock of the near fore and off hind leg were swollen, somewhat warm and very painful on lateral pressure, and while there was no tendency of the fetlock to descend nor to the elevation of the toes, a diagnosis of giving away of the sesamoid ligament was made and the animal ordered to be destroyed.

Post mortem lesions were very interesting; upon removing the skin the cellular tissue from the foot up to the knee was found infiltrated with blood of a dark color; the structures otherwise were all healthy, with the exception of the sesamoid bones and the ligaments attached to them; the suspensory ligament of the off hind leg was torn almost completely from its point of attachment to the bone and carrying with it fragments of the bone itself, the severed ends giving a crepitant sensation and being deeply stained with ecchymotic spots. In the near fore leg this condition was directly reversed, the inferior sesamoid ligaments being torn from their insertion to the sesamoids.

FRACTURE OF THE ACETABULUM, DISLOCATION, SHORTENING OF THE LIMB.

BY THE SAME.

A black pony, used for saddle purposes, while being clipped December 2, reared up from some cause and fell backwards upon the near side, and when he got up was found to be very lame in the near hind leg. Rectal examination and manipulation of the limb gave distinct crepitus over the cotyloid cavity, the external angle of the ilium having dropped about two inches. The owner being apprised of the nature of the case and advised to destroy him, insisted upon treatment for personal reasons.

Being placed into slings, the subsequent history of the case is devoid of interest, excepting that in about a week afterward the leg from the hock to the body became enormously œdematous, the sheath and scrotum also becoming involved and inducing a stubborn paraphymosis; both conditions, however, yielded to warm fomentations, suspensory bandage and liberal scarification.

The limb gradually became shortened, the coxo-femoral articulation very prominent and the gluteal muscles rapidly atrophic. When taken out of slings after about six weeks rest, he was found to move with a peculiar straddling gait and with considerable difficulty, the hip joint being very limited in its action. Rectal examination revealed a calus of considerable size over the joint and running towards the floor of the pelvis.

The post mortem lesions were very interesting, the fracture being located at the middle of the caxal bone, the acetabulum being broken into four pieces of various sizes, the neck of the ilium had dropped down, and a sharp edge of the bone resting upon the circumference of the head of the femur had worked a groove an inch and a half long and fully half an inch deep upon the promiscuous head. This part of the femur was displaced upwards and the calus extended in surrounding the entire structure forming an irregular mass from the supro-cotyloid crest to the middle of the small sciatic notch. The femur, beyond the injury to the head, was healthy, with the exception of a slight osseous depos it around the base of the head of the bone. Had the animal been allowed to live some time longer, a complete ankylosis would have taken place, with considerable shortening of the leg.

VETERINARY COLLEGE ITEMS.

AMERICAN VETERINARY COLLEGE.—The requirements of the dissecting room of this institution have assumed such proportions that the creation of the position of *Assistant Demonstrator of Anatomy* has become a necessity. Applications for this position for the coming session may be made at once, to the Dean, and will be received up to the first of June.

VETERINARY DEPARTMENT OF THE UNIVERSITY OF PENNSYLVANIA.—We take the following paragraph from one of the Philadelphia papers:

Dr. Rush Shippen Huidekoper, Dean of the Veterinary Department of the University of Pennsylvania, and who organized that department in 1883, has announced his intention of resigning his position and removing to another city, probablp New York. Dr. Huidekoper is well known in medical and veterinarian circles, having made an enviable record in both fields.

AMERICAN VETERINARY COLLEGE.—The examinations for graduation will begin February 18th, and the commencement exercises of the session 1888-89 take place at Chickering Hall on Friday, March 1st, at 8 o'clock P.M.

GLANDERS.

The following letter upon the subject of glanders as an infectious disease and the propriety of killing animals suffering from said disease or farcy, as soon as recognized, is published for the information and guidance of the U. S. Army:

BALTIMORE, July 24, 1888.

To the Quartermaster-General, U. S. Army, Washington, D. C.

GENERAL: In reply to your communication of July 19th, I have the honor to submit the following statements and opinions:

Glanders is an infectious disease in which the infectious agent has been demonstrated to be a living micro-organism—a bacillus.

The bacillus of glanders was discovered by the German bacteriologists, Loffler and Shutz, in 1882, and the discovery has

since been confirmed by several other competent bacteriologists. It is found in the nasal secretions and ulcers of the mucous membrane, in the "farcy-buds," pustules and enlarged lymphatic glands of infected animals, and it is probable that it is also sometimes present in the urine.

It is a slender rod, somewhat similar in appearance to the well-known tubercle bacillus, but more uniform in size and somewhat broader. In preparations stained with fuchsin or with Loffler's solution of methyline blue, clear spaces are often seen in the rods, which have been thought by some authors to be spores, but this is doubtful, as Loffler has found that no development occurs after the bacilli have been exposed to a temperature of 55° C. (131° F.) for ten minutes.

Pure cultures of this bacillus have been shown to produce typical glanders in horses and asses, and it is recognized by bacteriologists as the cause of the disease. The disease may also be transmitted by inoculation to Guinea-pigs and to field-mice, which animals (preferably Guinea-pigs) may be used as a test of the infectious character of the nasal secretions of a suspected animal.

Exact experiments have shown that the bacillus of glanders is killed by exposure for five minutes to a 5 per cent. solution of carbolic acid, or by a 1 to 5000 solution of corrosive sublimate.

In practice it will be best to rely upon boiling water for the disinfection of all articles which can be immersed in it without injury—rope, halters, blankets, currycombs, bits, etc. To keep on the safe side, half an hour may be fixed as the standard time which articles to be disinfected shall be immersed in boiling water, or exposed to steam at a temperature of 212° F.

Articles of leather should be repeatedly washed with a 5 per cent. solution of carbolic acid or a 1 to 1000 solution of corrosive sublimate; or immersed in such a solution for at least one hour. If the solution can be used hot, say 180° F., without injury to the material, this will be desirable.

All exposed parts of an infected stable should be thoroughly and repeatedly (three or four times) washed with a hot solution of one of the above named disinfectants. The carbolic acid solution (5 per cent.) will be preferable on account of the poisonous

nature of the solution of the bi-chloride of mercury; but the latter is less expensive, and under proper supervision there should be no special danger in using it. After its use, feeding-troughs, etc., should be thoroughly scrubbed with hot water to remove all traces of the poisonous salt. The application of a lime wash to all surfaces after complete disinfection, will be desirable.

Stables occupied by infected or suspected horses should be disinfected daily by washing exposed surfaces with a 5 per cent. solution of carbolic acid, and nose-bags, halters, buckets used for drinking-water, etc., should be carefully washed with the same solution or with boiling water.

In view of the reliability of known measures of disinfection, when properly executed, I do not consider it necessary or justifiable to destroy Government property of value which has become infected by contact with animals suffering from glanders.

I do not doubt the propriety of killing animals suffering from glanders or farcy as soon as the nature of the disease is recognized.

Very respectfully, your obedient servant,

GEO. M. STERNBERG,
Major and Surgeon, U. S. Army.

VETERINARY LEGISLATION.

AN ACT TO REGULATE THE PRACTICE OF VETERINARY MEDICINE AND SURGERY IN PENNSYLVANIA.

SECTION 1. *Be it enacted by the Senate and House of Representatives of the Commonwealth of Pennsylvania, in Grand Assembly met, and it is hereby enacted by the authority of the same,* That every person who shall assume, or use, or cause to be used, any title pretaining to the practice of veterinary medicine or surgery or any of the branches of veterinary medicine or surgery, shall be a graduate of a legally-chartered veterinary college or university, having the power or authority to confer the degree of veterinary surgeon or analogous title; except as

provided for in Section II. And such practitioner shall be required to register in the book kept for the purpose in the office of the prothonotary of the county in which he resides.

§ 2. Any person who has assumed the title of veterinary surgeon or analogous title, in this commonwealth, for the five years preceding the passage of this act, without being entitled to the degree of veterinary surgeon or analogous title, shall be allowed to continue the use of this title; but such person shall appear before the prothonotary of the county in which he resides and make affidavit of that fact; he shall then be recorded as an "existing practitioner,"

§ 3. The prothonotary shall purchase a book of a suitable size, to be known as the *Veterinary Medical Register* of the county, and shall set apart one full page for the registration of each practitioner; and when any practitioner shall die or remove from the county, the prothonotary shall make a note of the same, and shall perform such other duties as are required by this act.

§ 4. Every practitioner who shall be admitted to register shall pay to the prothonotary the sum of one dollar; which sum shall be compensation in full for registration. The prothonotary shall give a receipt for the same, and such registration shall take place within six months from the passage of this act.

§ 5. Nothing in this act shall be so construed as to prevent any veterinary surgeon (if legally qualified to use the title) from using the title of "veterinary surgeon" or analogous title in this commonwealth; but if such veterinary surgeon opens an office or uses the title for the transaction of business, he shall be deemed "a sojourner" and shall conform to the requirements of this act.

§ 6. Any person who may desire to commence the practice of veterinary surgery or medicine, or any of its branches, in this State after the passage of this act, and who holds a veterinary diploma, issued, or purporting to have been issued, by any veterinary college or university in this State, another State or foreign country, shall make affidavit before the prothonotary that his diploma has been regularly issued by a legally-chartered veterinary college or university, after which such person will be allowed to register as provided for in this act.

§ 7. Any person who shall present to a prothonotary a vet erinary diploma which has been obtained fraudulently; or which is, in whole or in part, a forgery; or shall make affidavit to any false statement, intended to be filed or registered; or shall use the title of veterinary surgeon or analogous title, without conforming to the requirements of this act; or shall otherwise violate or neglect to comply with any of the provisions of this act, shall be deemed guilty of a misdemeanor, and, on conviction, shall be punished for each and every offence, by a fine of one hundred dollars—one-half to be paid to the prosecutor and the other half to be paid to the county; or shall be imprisoned in the county jail of the proper county for a term not exceeding one year, or both or either, at the discretion of the court.

CORRESPONDENCE.

VETERINARIAN WANTED.

TROY, N. Y. January 11th, 1889.

Editor American Veterinary Review:

DEAR SIR.—We have an excellent opening for a young veterinary surgeon. Will you please hand this letter to such an one as in your judgment would be competent to enter into a general practice.

Yours &c.,

DOUGREY & ROACH.

LONDON VETERINARY JOURNALS FOR SALE.

LOWELL, Dec. 30, 1888.

Editor American Veterinary Review:

DEAR SIR:—Please publish card in your veterinary journal, that I have for sale twenty-one volumes of *London Veterinary Journal*, dates, 1841 to 1861. Bound in leather, well, and neatly preserved. I will sell them for a fair price. With kind regards.

Truly yours,

ROBT. WOOD.

COPY OF A PROPOSED LAW WANTED.

SAN FRANCISCO, 3rd January, 1889.

Editor American Veterinary Review:

DEAR SIR.—You will confer a great favor by kindly sending me a copy of the law proposed to regulate the practice of veterinary science in the State of Pennsylvania, as the California State Veterinary Association wishes to protect itself against the ravages of an irruption of empirics into this State.

The coming Legislature is considerably exercised over the recent out breaks of anthrax, Texas fever, etc., and, we the California State Veterinary Association consider this an opportune moment to obtain legislation.

I enclose you a copy of our Constitution and By-Laws, etc. Hoping you will kindly give this your earliest attention, believe me,

Yonrs sincerely,

WM. BOWHILL.

(The publication of said act in the REVIEW answers the application of our correspondent. ED.)

SOCIETY MEETINGS.

UNITED STATES VETERINARY MEDICAL ASSOCIATION.

President, R. S. Huidekoper, 36th and Pine Streets, Philadelphia, Pa.; *Vice-President*, D. J. Dixon, Hoboken, N. J.; *Secretary*, W. H. Hoskins, 12 S. 37th Street, Philadelphia, Pa.; *Treasurer*, J. L. Robertson, 409 9th Avenue, New York.

Board of Censors.—Dr. E. C. Ross, Connecticut; Dr. J. F. Winchester, Massachusetts; Dr. William H. Wray, New York; Dr. L. H. Howard, Massachusetts; Dr. A. W. Clements, Maryland; Dr. W. L. Zuill, Pennsylvania; Dr. L. McLean, New York.

Library Committee.—S. K. Johnson, Chairman, 117 W. 25th Street, New York; Wm. Dougherty, Maryland.

Committee on Intelligence and Education.—W. C. Coates, Chairman, 141 W. 54th Street, New York; J. C. Myers, Sr., Ohio; B. McInnes, South Carolina; A. Peters, Massachusetts; Wm. L. Zuill, Pennsylvania.

Finance Committee.—L. McLean, Chairman, 14 Nevins Street, Brooklyn, N. Y.; W. Bryden, Massachusetts; C. B. Michener, New York.

Committee on Diseases.—A. W. Clement, Chairman, 210 St. Paul Street,

Baltimore, Md.; J. F. Winchester, Massachusetts; W. B. Miller, New Jersey; R. A. McLean, New York; Paul Paquin, Missouri.

Prize Committee.—L. H. Howard, Chairman, 1440 Washington Street, Boston, Mass.; D. J. Dixon, New Jersey; J. Gerth, Jr., New Jersey.

Special Committee to secure a uniform standard of examinations by the different Veterinary Colleges of North America.—M. Bunker, Chairman, Newton, Mass.; C. C. McLean, Pennsylvania; S. J. J. Harger, Pennsylvania.

Committee on Army Legislation.—A. Liautard, Chairman, 141 W. 54th Street, New York; W. H. Pendry, New York; C. Moulton, Missouri.

Publication Committee.—W. H. Hoskins, Chairman, 12 S. 37th Street, Philadelphia, Pa.; C. B. Michener, New York; D. J. Dixon. New Jersey.

Assistant (State) Secretaries.—P. L. Colsson, V.S., Mobile, Ala.; Ward B. Rowland, D.V.S., Los Angeles, Cal.; F. W. McLellan, V.S., 144 Noble Street, Bridgeport, Conn.; Jos. C. Bushman, V.S., 404 14th Street, N. W. Washington, D. C.; H. J. Detmers, V.S., Champaign, Ill.; Madison Bunker, D.V.S., Newton, Mass.; Geo. H. Bailey, D.V.S., 1 Pine Street, Portland, Me.; Wm. Dougherty, D.V.S., 1035 Cathedral Street, Baltimore, Md.; C. C. Lyford, V.S., Minneapolis, Minn.; C. W. Crowley, D.V.S., St. Louis, Mo.; D. J. Dixon, D.V.S., 366 Washington Street, Hoboken, N. J.; J. Faust, V.S., 211 Union Street, Poughkeepsie, N. Y.; Wm. R. Howe, V.S., Dayton, Ohio; Chas. T. Goentner, D.V.S., Bryn Mawr, Pa.; C. H. Peabody, D.V.S., Cor. Union and Worcester Streets, Providence, R. I.; B. McInnes, V.S., Charleston, S. C.; J. W. Scheibler, D.V.S., 321 Second Street, Memphis, Tenn.; E. W. Rowland, D.V.S., Monroe, Wis.

LONG ISLAND VETERINARY SOCIETY.

The annual meeting of the Long Island Veterinary Society was held at 74 Adams Street, Brooklyn, on Wednesday, December 19, 1888, the President Dr. George H. Berns in the chair. There was a full attendance.

Minutes of the previous meeting stood accepted as read.

Reports were received from the Treasurer and Secretary, showing the thrifty condition of the Society, there being a substantial balance in the treasury above all liabilities. Dr. W. H. Pendry, the chairman of the Board of Censors, reported favorably on the application of E. J. Decker, D.V.S., of Springfield, L. I., who was unanimously elected to membership.

On the call for reading of papers, Dr. W. H. Pendry responded with one, taking for his subject "Laminities versus Founder," in which he contended that laminities was not of necessity founder, and sought to impress his hearers with the unfairness of so commonly using the term founder, he considering that in the latter there were structural changes which could not possibly be positively overcome, and that where laminities or simple congestion existed that the client should not be unnecessarily alarmed by being told that his horse was foundered. He quoted at length from Zundel, Williams and Dick to strengthen his opinion.

The argument was taken that the term founder was a layman's term and not a technical or professional one, and that cases of laminities were called founder, because the owner better understood it and it avoided explanation.

The causes and treatment were extensively and interestingly discussed, and a vote of thanks was extended the reader.

The election of officers for 1889 succeeded and resulted as follows: President, Geo. H. Berns, D.V.S.; Vice-President, J. Fred Mustoe, D.V.S.; Secretary, Frank J. Hanshew, D.V.S.; Treasurer, Geo. F. Bowers, D.V.S.; Board of Censors, W. H. Pendry, D.V.S., Chairman, J. F. Mustoe, D.V.S., Sam'l Atchison, V.S., Philip Newman, D.V.S. and D. S. Breslin, D.V.S.

A communication was received from Dr. A. Liautard giving the name of the veterinary surgeon who had prosecuted a party for illegal practicing under the State laws, in which the preposterous and nonsensical opinion was expressed by the presiding judge, that castration *was not* an operation of veterinary surgery, upon which opinion the prosecuting veterinarian is being sued for damages. The Secretary was instructed to place himself in communication with the party, conveying the sympathy of the Society and requesting him to forward full particulars.

The prolonged and interesting meeting was then declared adjourned.

FRANK J. HANSHEW, D.V.S., *Secretary.*

MARYLAND STATE VETERINARY MEDICAL SOCIETY.

The Maryland State Veterinary Medical Society meets during the winter months bi-weekly. At the last few meetings the following papers, discussions, etc., were enjoyed by those present.

November 22d, Dr. Dougherty had an essay on Castration.

December 5th, Dr. G. C. Faville led a discussion on "Influences of Climate on Glanders and Lung Troubles."

December 19th, Dr. W. H. Wray read a report of a case of Influenza complicated with Purpura Hemorrhagica and followed by Nasal Polypus with Perforation of Septum Nasi. Also a demonstration of Caponization by Dr. J. F. Ryder.

January 3d, Dr. T. F. Barrow read a report of a case of Intestinal Calculi. Dr. F. L. Russell gave a dissertation on the "Contagion of Tetanus," and also exhibited by microscope the organism of Tetanus.

The attendance at these meetings was very good, and much interest is being manifested by all members, who find themselves much benefitted by the frequent meetings.

W. H. MARTENES, D.V.S., *Secretary.*

INDIANA VETERINARY ASSOCIATION.

The Indiana Association of Veterinary Graduates met in Indianapolis, January 16, 1889, and organized permanently.

The following officers were elected for this year: H. R. Macauley, Indianapolis, President; T. L. Armstrong, Indianapolis, 1st Vice-President; W. B. Wallace, Marion, 2d Vice-President; F. A. Bolser, Neweastle, 3d Vice-President; J. C. Rodger, Anderson, Recording Secretary; M. E. Knowles, Terre Haute, Corresponding Secretary; B. G. Orlipp, Indianapolis, Treasurer.

After adoption of Constitution and By-Laws, the Code of Ethics of the Pennsylvania Association was adopted.

There were about twenty-five graduates enrolled, which we think makes a very creditable showing, and that it demonstrates the necessity of making veterinary associations exclusive of charlatans to claim the undivided attention of truly professional men.

Quite an interesting and instructive paper on The Importance of Meat Inspection to Public Health, was read by Dr. J. C. Rodger, of Anderson, followed by a discussion in which all took part.

Dr. H. R. Macauley, of Indianapolis, also favored the Association with an admirable paper on The Uses of Sulphate of Morphine in Equine Practice, in which he laid particular stress on the hypodermic and intravenous use of this drug, giving his practical therapeutic experience.

An animated discussion followed, after which the date of next meeting was set for some time in September, (notification hereafter); appointment of committes and adjournment.

We have about thirty-five graduates in the State and confidently expect every one of them to become members of the Association, as, in fact, most of them have signified their intention of doing.

I will send the REVIEW a list of members as soon as Dr. Rodger favors me with a copy.

M. E. KNOWLES, *Corresponding Secretary.*

NEWS AND SUNDRIES.

A HOME FOR INFIRM ANIMALS.—Word comes from Philadelphia of a peculiar bequest, as follows: Miss Annie Wain Ryerss, of Philadelphia, at her death left $70,000 in her will to found a home for infirm animals. To carry out her wishes a farm has just been purchased near Hustleton, Pa., on which has been fitted up stables and stalls for horses and cattle. A stone kennel is being built for the care of afflicted dogs. There will be a large space in which these animals may have a run when they are sufficiently convalescent to desire and enjoy any exercise. It has not yet been decided whether to admit cats and other animals. An account says: 'The main objects of the infirmary are to temporarily care for and give rest to the horses of carters, teamsters, and others too poor to shelter and feed their stock unless they work therefor, and to afford a place of refuge for old and infirm favorites of rich people, many of whom have such an affection for pets that they will not have them killed when they become

old and feeble. For these animals a charge will be made.'" —*National Live Stock Journal.*

DISEASES IN MONTANA.—According to one of our exchanges, regarding the prevalence of disease among horses, the territorial veterinarian, Dr. Holloway, says: "During the past few months I have examined cases of 'unknown' horse diseases in the Gallatin valley, and found severe cases of influenza with more or less of its many forms and complications. On Mizpah Creek, Custer County, I found that form of influenza known as epizootic pleuritis. In another part of the territory I found the 'unknown' to be a hoof disease, 'furuncle,' and in another place it turned out to be a bad outbreak of glanders, and so I could go on and state where I had found cases of paralysis, pyogenic fever, azoturia, 'loco' poisoning ('loco' can hardly be termed poisonous; it affects animals in much the same way that the opium habit affects people), scarlet fever, ergotism, etc., but I think this will be sufficient to convey my meaning. Taking into consideration the number of horses in Montana, the exposures to which they are subjected, and the little care they receive, I consider them as healthy as any in the Union, and I unhesitatingly state that we have no worse diseases among our horses to-day than can be found in almost every State and Territory from Maine to California.

DISEASES OF CHILDREN.—Messrs. J. B. LIPPINCOTT COMPANY announce to the profession the publication of a "CYCLOPÆDIA OF THE DISEASES OF CHILDREN," medical and surgical, by American, British, and Canadian authors, edited by J. M. Keating, M. D., in four imperial octavo volumes; to be sold by subscription only. The first volume will be issued early in April, and the subsequent volumes at short intervals.

A thorough knowledge of the diseases of children is a matter of greatest importance to most physicians, and as this is the only work of the kind that has been published in English, it will be invaluable as a text-book and work of reference for the busy practitioner.